A large, stylized graphic on the left side of the page. It consists of a thick, light purple arc at the top, a solid purple circle below it, a solid grey circle below that, and a thick grey shape at the bottom that resembles a stylized figure or a large letter 'A'.

Prepared for
McMaster Intersession Learning team,
INSPIRE Office of Flexible Learning

In
April 2023

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Executive Summary

Background: McMaster University INSPIRE Office of Flexible Learning recognized that a large gap exists in the skills, knowledge, and expectations of first year students transitioning from high school. As a result, the INSPIRE intersession learning courses were designed to help incoming first-year students transition into their first year of university. McMaster Research Shop collected feedback on the experiences of first and second-year McMaster University students to identify course topics and a structure that would be appropriate for INSPIRE courses.

Objectives: Our primary objectives were to (1) understand the challenges faced by first-year students at McMaster University, (2) identify course topics that are relevant to first-year students at McMaster University, and (3) identify preferred course structures of incoming first-year students at McMaster University.

Methods: Student feedback was collected via a survey with 694 respondents. We also interviewed a small number of students.

Findings: Most students rated their first year of university as moderate to very challenging. They rated the most challenging aspects as time management, adapting to changes in educational format and teaching style, and finding community. Healthy student habits and academic skills were considered to be the most important topics for first-years, followed by writing skills and career skills. Financial literacy and numeracy skills were rated as least important.

Approximately half of the survey participants indicated preference of choosing individual 1-unit course(s), while the other half (49.6%) indicated a preference for the courses to be packaged into one 3-unit course covering all relevant topics. Reasons for these preferred structures overlapped, including convenience and the flexibility to take units most relevant to them.

The interview findings were consistent with the survey findings in highlighting both academic and social challenges in acclimatizing to university.

Takeaways: The challenges first year students articulated combined with their course topic preferences foreground academic skills, time management, and managing personal health/well-being as the most relevant course topics to students in our sample. Students were divided on a preferred course structure, though flexibility and convenience seem to be important in the selection of a structure. The limited number of interviews conducted indicates these insights are preliminary and would benefit from further input from students, such as via focus group research or a student working group.

Key Terms

“Intersession courses” refer to courses offered outside the academic school year, in between school years or semesters. In the context of this project, these are courses offered by the INSPIRE Office of Flexible Learning in the Spring/Summer session to help incoming first and second-year students transition into university.

“Community partner” refers to the McMaster Intersession Learning team at the INSPIRE Office of Flexible Learning who we partnered with to conduct this research project.

Introduction

Background

Each year, McMaster University welcomes over 25,000 first-year undergraduate students across its six faculties of studies: Faculty of Science, Faculty of Social Sciences, Faculty of Health Sciences, DeGroot School of Business, Faculty of Engineering, and Faculty of Humanities¹. Despite numerous orientation activities and programming, first year of university continues to be a challenging stage in many students' lives that is marked with mixed feelings of excitement and nervousness.

Intersession learning at McMaster, administered by the INSPIRE Office of Flexible Learning, is working towards the development of intersession courses that can help incoming first-year students transition better into their first year of university. This comes from recognizing that there is a large gap in skills, knowledge, and expectations that incoming high school students face when transitioning into their first year as university students. "Intersession" refers to courses that are taken in the Spring/Summer term when students have the flexibility to take courses outside of their program.

Based on preliminary feedback from students and educators at McMaster, in Fall 2021, the team piloted offering three INSPIRE courses to incoming students, focusing on developing academic, professional, and wellness skills. However, enrollment for these courses was much lower than expected. As such, the Intersession Learning team is taking a pause to conduct research around the content and structure of these courses to ensure the offering is feasible/relevant with the goal of increasing uptake. The team has partnered with the McMaster Research Shop to collect feedback from students on the content and structure of INSPIRE University Success courses. The data gathered from this project and conclusions drawn from it will be used to inform course development.

In terms of course content, several course topics have been previously offered (academic, professional, and wellness skills), and more are being considered (financial literacy, numeracy, and writing skills). In terms of course structure, the team is envisioning the development of a customizable, low-barrier course for students. Potential course structures could include offering several one-unit courses, one for each topic, where the students can choose how many courses and which ones they would like to take. Another option is offering one large 3-unit course within which the students can choose the topics they would like to study. The courses can also either partially or completely run during the summer term, or during the Fall term.

Research question and objectives

The primary research question for this project is as follows:

- What are student perspectives (e.g., preferences) on the **content** and **structure** of INSPIRE University Success courses?

The following objectives were developed to guide our work:

Objective 1) Understand challenges faced by first-year students at McMaster University.

Objective 2) Identify course topics relevant to first-year students at McMaster University.

Objective 3) Identify course structure preferred by first-year students at McMaster University.

Scope

This research includes a survey of participating first-year and second-year students at McMaster University as well as limited interview results from a small subset of those students. Students from all faculties including Health Sciences, Business, Life Sciences, Humanities, Social Sciences, and Engineering are included in the study.

Report Structure

Methodology used to conduct the research, findings from survey and interview analysis, and key takeaways from the research are described. A bibliography and appendices containing data collection tools are also included for further reference.

Methods

Overview

A team of McMaster Research Shop researchers conducted an online survey and interviews with first- and second-year McMaster University students to explore the development of intersessional courses that can help students better transition into their first year of university.

Online survey

The survey was hosted on Google Forms and consisted of 16 open and close-ended questions collaboratively formed between the community partner and the research shop team. Survey questions were about the content and structure of intersessional courses to ensure its offering is both feasible and relevant to incoming first-year students. The survey was distributed through department, faculty, and student clubs' emails as well as social media advertising. Participants were provided with a chance to win a \$25 Amazon gift card to increase participation.

We used descriptive statistics to analyze the resulting data. Data from close-ended questions were converted to percentages. Data from Likert scale type questions were converted to weighted averages. Data from open-ended items were grouped by theme, tallied, and presented as percentages based on McMaster faculties.

A copy of the survey questions can be found in **Appendix A**. The recruitment email/social media message and poster can be found in **Appendix B**. The codebook used for open-ended questions' analysis can be found in **Appendix C**.

Online interviews

At the end of the survey, participants were asked if they would like to participate in an online focus group/ interview to provide further insight into intersessional course development and to supplement the findings from our survey. If participants answered "yes", they were asked to provide their contact email. Our objective was to conduct focus groups, assuming enough participants signed up to conduct at least one focus group and scheduling could be coordinated. Our backup plan was to conduct one-on-one interviews if we did not have enough participants and/or scheduling difficulties prevented us from selecting a time for a focus group. Participants were provided with a chance to win a \$25 Amazon gift card if they signed up for a focus group or interview to increase participation.

Among the 236 survey participants who agreed to be contacted for a focus group/interview, 10 participants from each faculty (for a total of 60 participants) were randomly selected and emailed for registration for focus groups. Due to a low response rate, we were able to only conduct two interviews from this round of recruitment. We sent a follow-up reminder email to the other 58 participants with new focus group times, along with 30 new randomly chosen participants. From this round of recruitment, we were able to get one more student interview. Two other participants had also registered, but unexpectedly did not attend their registered meeting. The initial goal was to have 5 focus

groups with approximately 5 participants each; however, in the end, we only conducted 3 interviews due to a low response rate.

Interviews were hosted on Zoom and consisted of 12 open-ended questions. Two research team members attended each focus group. One team member took notes and recorded the meeting, and the other team member facilitated the discussion. Participants were asked for their informed consent before starting the interview.

All interviews were recorded, transcribed, and stored on a secure Google Drive folder before thematic coding. Codes were tallied and sorted based on the McMaster's faculty.

A copy of the focus group recruitment email message can be found in **Appendix D**. The focus group facilitation guide can be found in **Appendix E**.

Limitations: Representativeness of sample

Although the research team aimed to have equal representation across all faculties, there was a disproportionate response rate among various faculties with Faculty of Science having a disproportionately high response rate (48.7%) compared to other faculties. Participant recruitment occurred by convenience sampling, and as such individuals and organizations with previous connections to McMaster Intersession Learning may have been more likely to receive communications about the survey as well as fill it out.

As outlined in the methods section, we were not able to schedule focus groups and we were only able to conduct three interviews, which is a very small sample size. Interviews were held on weekdays and weekends during 1-hour time slots. It is possible students had lectures during these times or other obligations and were not able to participate, and thus not represented in the data. Due to time constraints, additional interviews could not be conducted.

As a result of the above factors, research presented in this report likely does not fully represent the perspectives of first- and second- year McMaster students regarding intersession courses. The small sample size of three in the interviews also leads to concerns about perspectives who were unintentionally not included in the research. Therefore, these findings are preliminary, and analysis is limited. Interviews are summarized as cases in the Findings section. The INSPIRE Office for Flexible Learning should continue to consult with first- and second- year students to better understand their viewpoints and take this into consideration when designing and developing INSPIRE courses.

Findings

The survey received a total of 1626 responses. After removing duplicate responses, responses by “bots”, and responses which are outside the inclusion criteria (e.g., participant was not in first or second year of undergraduate students at McMaster University), a total of 694 responses were used for analyses. Since each question on the survey was optional, the number of responses for each question was variable. **Appendix F** provides a breakdown of the number of responses for each survey question.

Participant Characteristics

Approximately half of the survey participants (51.2%) were in first year of university and the other half (48.8%) were in second year. Most survey participants were from the Faculty of Science (48.3%). The remaining participants were from the Faculty of Social Sciences (13.9%), Engineering (12.3%), Health Sciences (10.9%), Humanities (9.1%), and Business (5.4%) (Figure 1).

Additionally, 589 out of 694 students also shared their program name. The top five programs survey participants were enrolled in included Life Sciences (20.9%), Computer Science (4.2%), Kinesiology (4.2%), Math and Statistics (3.0%), and Social Science (2.9%). **Appendix G** outlines the distribution of all participant programs of study.

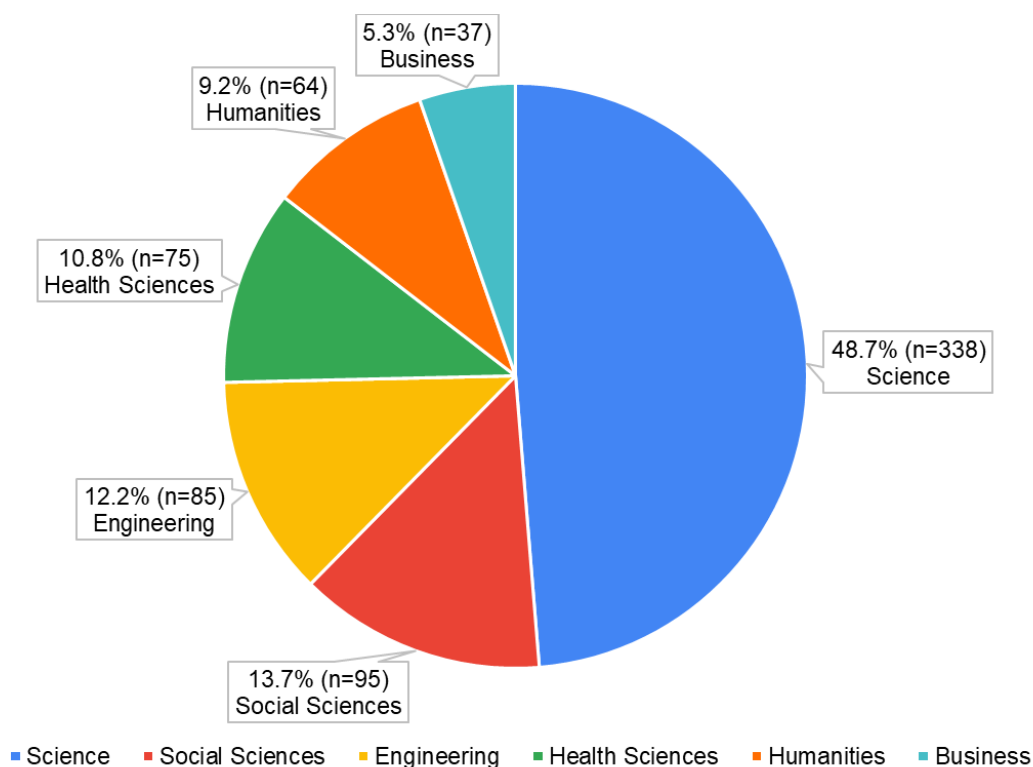


Figure 1: Faculty breakdown of student participants.

Objective 1: Understanding challenges faced by 1st year students

When survey participants were asked to rate, on a scale from 1 to 5, how challenging they found their first year of university at McMaster (1 being 'Not challenging', and 5 being 'Very challenging;), most students rated their experience moderate to very challenging with a weighted average rating of 3.6 across all participants and a standard deviation of 0.91.

An optional follow-up question invited participants to elaborate on their rating and share specifics about areas they found challenging. Most survey participants that responded to this optional question were from the Faculty of Science (41.73%), followed by the Faculty of Humanities (13.97%) and the Faculty of Social Sciences (13.47%). Students' responses were categorized into three main themes, as outlined in the subsections below:

1. Time management (n=94)

Time management was a major concern for students from every faculty as several students described difficulties with establishing a balance between their academic, personal, and social lives. Students described feeling overwhelmed with schoolwork which negatively impacted other areas of their lives such as difficulties establishing structured sleeping and eating habits, maintaining positive mental health, and socializing with friends.

"It was very easy to get overwhelmed by school work and forget to make time to ensure that I was properly taking care of myself and having a life besides school" - 2nd year Medical and Biological Physics Student

"Time management seemed impossible. Maintaining and making new friendships was also very hard. Keeping a healthy mindset and sleep schedule seemed to be a chore." - 2nd year Social Psychology Student

"I felt like I had no free time and all I was doing was school work, I didn't know how to schedule time or get stuff done effectively." - 2nd year Core Biology Student

"I would stay up till 2 am on daily basis so that I didn't fall behind on work. I had a habit of working ahead and found that I was under extreme pressure to keep my grades high due to high standards I had set at the beginning of the year." - 2nd year Medical Radiation Sciences Student

2. Adapting to change in educational format and teaching style (n=68)

In parallel to challenges with time management, students also expressed difficulties in keeping up with the pace of their university coursework (e.g., budgeting time to complete assignments and prepare for midterms, managing multiple courses at once, being prepared for classes, completing readings on time, etc.), which was sometimes further exacerbated due to the altered format of high-school or university courses during COVID-19 and led to students feeling overwhelmed.

"Having to adjust to the pace of the university and the volume of content. It felt like a month of high school content was taught in a week." - 2nd year Biology Student

“After the first midterm, the second midterm came faster than I expected, and I found myself scrambling to catch up on the new content I would be tested on while simultaneously trying to understand what I was learning.” - 1st year Engineering Student

“Especially going from the quadmester system in high school, I wasn't used to having to deal with 5 sets of classes, assignments, and deadlines at once and I found it difficult to keep track of all the information for all my courses” - 2nd year Medical and Biological Physics Student

3. Finding community: Making friends (n=57) and living away from home (n=25)

Adapting to changes in academic, social, and physical lifestyle at university was also a challenge for most surveyed students. Several students described their struggles with finding their community and support system on campus. Difficulties with making friends and living away from home for the first time played the biggest roles in contributing to this theme. Feelings of loneliness and isolation sometimes also followed as a result of these difficulties.

“Finding peers to study with and forming peer relationships has been extremely difficult.” - 2nd year History Student

“Dealing with loneliness - living away from home for the first time, feeling like you're the only person in the world who's isolated, while you hear others are out with friends at that time.” - 2nd year Life Sciences (Secondary Motor Systems specialization) Student

“Adapting to new learning environment and being away from home. Also feeling lonely and have the course load hit all at once. Was not prepared at all in highschool for this amount of stress” - 1st year Life Sciences Student

“most challenging aspect was being emotionally stable away from family. the big space change was harsh.” - 1st year Social Sciences Student

Adjusting to the campus and/or residence lifestyle was also a challenge some students described, including challenges navigating the campus, building a new routine, and living with others away from family:

“Navigating campus life -- all the little things like walking between buildings, needing to leave my dorm to get food, dealing with the changes throughout the day. Figuring out a routine that works” - 1st year Medical Radiation Sciences Student

“The size of the campus felt very daunting, so it was difficult for me to explore and become familiar with the facilities” - 2nd year Linguistics Student

“How to live with a roommate - compromising, lack of privacy at times.” - 2nd year Life Sciences (Secondary Motor Systems specialization) Student

We also noticed that these themes often overlapped with one another and affected student motivation, engagement, and self-esteem, as illustrated aptly by these student responses:

“Adjusting to the schedule was very difficult. University requires a lot of self-motivation to attend classes and study in advance. I really struggled with motivating myself. Another challenging aspect was making friends.” - 2nd year Chemical Biology

“My first year was pretty much solely online, and I felt very lost the whole time with regards to campus life and what I was meant to do” - 2nd year Kinesiology Student

“The change in grades, going from getting high 90s in high school to now receiving low 70s and 60s was a significant shock and was drastic to my self-esteem.” - 2nd year Health and Society and Political Science (Double Major) Student

Other notable themes were struggles with Studying/Note-Taking Strategies (n=50), Challenging Courses (n=36), and Mental Health management (n=21).

Objective 2: Identifying intersession learning course topics relevant and interesting to students

Intersession Learning had identified six topic areas they believed would be helpful to first year students during their transition to university based on their experiences, feedback during courses, and from discussion with campus partners. These topics were as follows: Healthy Student Habits, Academic Skills, Writing Skills, Career Skills, Financial Literacy, and Numeracy Skills. When participants were asked to rank how relevant each of these topics are to students entering their first year at McMaster University on a scale from 1 to 6 (1 = most important, 6 = least important), though the weighted averages between categories was similar, survey participants identified healthy student habits and academic skills to be the most important (both with a weighted average of 2.4), writing skills and career skills to be the second most important (both with a weighted average of 2.9), and financial literacy and numeracy skills to be the least important (with a weighted average of 3.1 and 3.4 respectively) (Table 1, Figure 2).

Table 1: Average ranking of course topics most relevant to students in first year (1=most important, 6=least important)

Topic	Weighted Average	Standard Deviation
Healthy Student Habits	2.4	1.08
Academic Skills	2.4	1.05
Writing Skills	2.9	1.08
Career Skills	2.9	1.08
Financial Literacy	3.1	1.07
Numeracy Skills	3.4	1.14

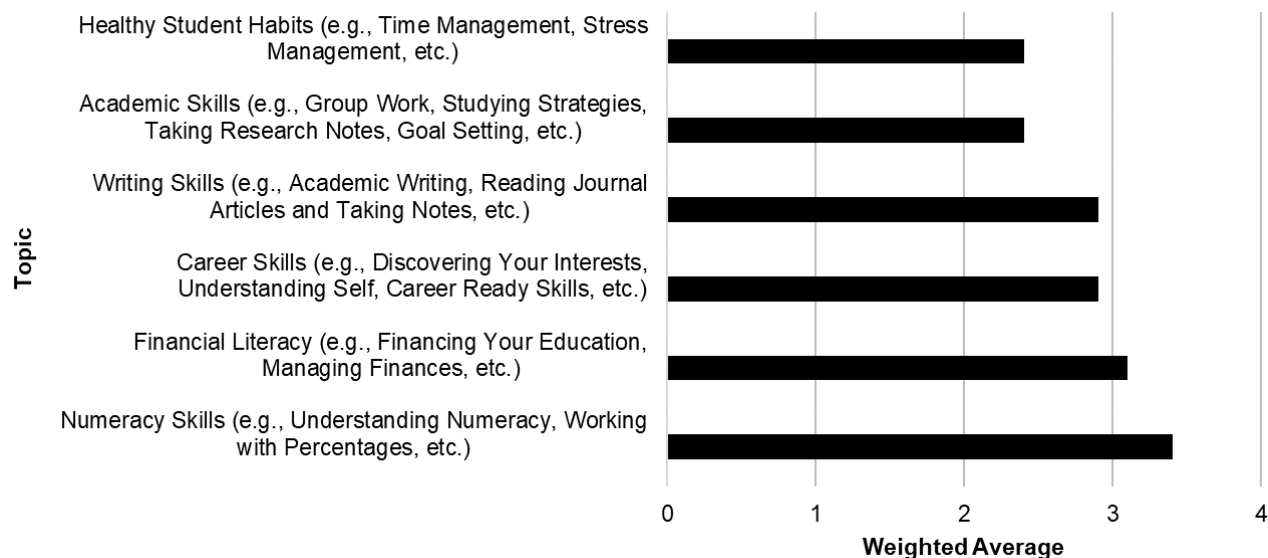


Figure 2. Course topics most relevant to students entering their first year at McMaster University.

A follow-up question was asked, giving participants the chance to elaborate on their chosen rankings. Most survey participants that responded to this optional question were from the Faculty of Science (54.64%), followed by the Faculty of Social Sciences (15.46%), and the Faculty of Humanities (9.28%). The primary themes that were common among the majority of the responses were needing assistance with time management (n=29), developing healthy study habits (n=22), and managing overall mental health (n=17) specifically when dealing with stress (n=16). Generally, the responses explained how the ranking selection was based on gaining the tools that would best prevent first-year students from falling behind in their studies, as illustrated by these student responses:

“If I had a good time schedule and if I was more organized in the beginning of 1st year, it would have made the transition easier overall.” - 2nd year Commerce Student

“I put time management first because that is what I mostly struggled with, and still struggle with, as a first year. The content taught, at least in my program, is not difficult. However, it is the speed and volume that it is being taught at. Based on what I've heard, this is a universal experience among university students. I felt as though emphasis on time management skills would certainly help make the process smoother, especially if I could learn non-traditional scheduling methods that work with my flexible learning style” - 1st year Medical Radiation Sciences Student

Participants were also asked if they would be interested in taking an intersession learning (INSPIRE) course if offered. An overwhelming majority of the students responded positively (82.5%) and indicated they would be interested in taking an INSPIRE course. An optional follow-up question also invited students to share which of the previously identified six topics they would be most interested in. Among the students who were interested in taking an INSPIRE course, most students were interested in taking a course for Academic Skills (65.3%). Some students were interested in taking a course for Career

Skills (19.8%) or Student Wellness (11.1%). Students were not very interested in taking a course for Writing Skills (1.4%), Financial Literacy (1.2%) or Numeracy Skills (1.2%) (Figure 3).

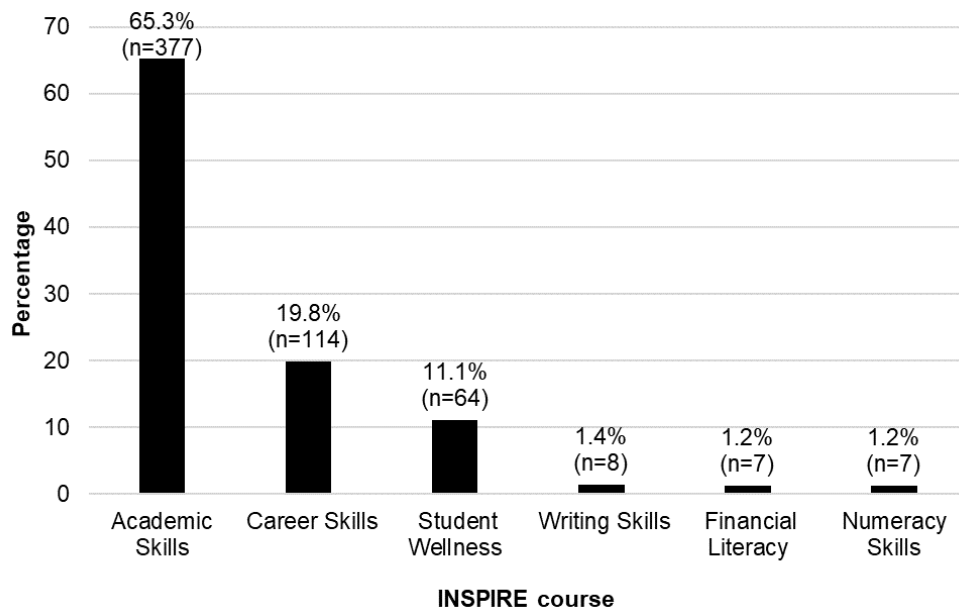


Figure 3. INSPIRE courses students are interested in.

Objective 3: Identifying intersession learning course structure preferred by students

Intersession Learning considered two potential course structures for INSPIRE courses. Approximately half the survey participants (50.4%) indicated they preferred having the flexibility to pick and choose between individual 1-unit course(s). Approximately half the survey participants (49.6%) indicated they preferred the courses to be packaged together into one 3-unit course that covers all relevant topics.

A follow-up question was asked for the participants to elaborate on what factors influenced their decisions to choose one option over the other. Students used a combination of these factors to come to a decision, often using the same factor to then pick different credit options depending on what better suited their needs and interpretation of the course.

- Interested in only specific topics: Most participants (n=39) listed being interested in only specific topics as being influential to their decision. Students chose a 1-unit course if they were only interested in one specific skill. Students also chose a 3-unit course because they were only interested in learning select topics of each skill.
- Flexibility and convenience: 29 participants deemed flexibility and convenience as being important when choosing either option. Students chose a 1-unit course because it was a lesser workload, and students chose a 3-unit course because it would not take up excess space on their timetable.

- Opportunity to learn many topics: 27 participants put wanting to learn many topics as a deciding factor. Students chose 1-unit if it meant they could continue to take many of these courses and learn all the skills they felt necessary. Student chose a 3-unit course because they would be able to learn all the skills available.
- Number of credits: Having the right number of credits for graduating was noted by 26 participants. Students chose a 3-unit course based on this factor because they felt it worked better with their plans to graduate.
- Course timing: The timing of the course was listed by 22 participants. Students chose a 1-unit course because they want to better use their time focused on the one skill they deemed important. Students chose a 3-unit course because it would take less time to get all three credits and learn a larger amount.
- Difficulty: 21 participants were influenced by the potential level of difficulty of the course. Students chose a 1-unit course if the course because if the course ends up being difficult it would not have a large impact on their GPA, Students chose a 3-unit course if it was not too difficult because they would want the higher grade to be worth more in terms of GPA.
- In depth learning: Having a preference for in-depth learning was noted by 22 participants. Students chose a 1-unit course because they would be able to spend a larger amount of time to thoroughly understand a topic. Students chose a 3-unit course because they would gain a better understanding of the topics if they were all packed in one course.

Some other minor themes mentioned by the participants are stress and motivation (n=9) students felt taking a 1-unit course would make it too stressful needing to take two more after. Students also felt taking a 3-unit course on a skill they needed help developing would be too stressful. A comprehensive and systematic method of learning was mentioned by 8 students who were in favor of a 3-unit course with all the skills packaged together.

The level of commitment and preparedness (n=8) influenced students to choose a 1-unit course if they felt they would not be committed to a larger 3-unit course. Students chose a 3-unit course if they felt they would be more prepared to take on such a course.

The ability to relate topics (n=9) influenced students to choose a 1-unit course because they would be able to pick the skills they wanted to connect together. This factor also influenced students to pick a 3-unit course because they felt the topics would connect better if packaged in one course. In terms of the organization of course that was noted by 6 students. Some felt a 1-unit course would be better organized and some felt a 3-unit course would be better organized. Some student responses that encompass these themes are:

“A three unit course may be more convenient rather than having to choose every individual course” - 1st year Life Sciences Student

“I think individual 1-unit courses are convenient because you are able to pick and choose which courses are most relevant to you.” - 1st year Life Sciences Student

“More flexible, allows students to get out if they’re not interested” - 2nd year Molecular Biology and Genetics Student

“It would be more simple since most classes are already 3 units each” - 2nd year Life Sciences Student

“Be better prepared for the course” - 1st year Computer Science Student

Interviews/Focus Group Discussion Summaries

Summaries of interview responses are provided below.

Participant A: First year Life Science student

Participant B: Second year Medical Radiation Sciences Student

Participant C: First year Social Sciences Student

Course Content

1. *From your perspective, what are some words you'd use to describe peoples' experience of first year University?*

- Participant A: Good community, lots of resources.
- Participant B: Difficult, exciting, interesting. Fall term courses for the student were online due to COVID-19 which made the transition to university more difficult. Getting used to the university workload was challenging and it was difficult to find help in online courses. Extracurricular activities helped student meet others facing similar challenges and feel more engaged. Winter term courses were in-person for them, which they found to be much more engaging and interesting.
- Participant C: Difficult, big changes, challenging, growth, exciting.

2. *How prepared did you feel going into university?*

- Participant A: Student felt very unprepared for university for the first few weeks, but this improved with time.
- Participant B: Student felt moderately prepared before entering university. Since their high school curriculum was reduced due to COVID-19, the student felt they did not have all the knowledge needed to succeed in university. Had just enough knowledge to keep up during first year courses.
- Participant C: Student felt prepared for university initially but realized its challenges upon starting first year.

3. *What do you think are the biggest challenges for students in first year University, if anything?*

- Participant A: They identified their biggest challenge in first year as finding a group of friends that they connected with. Since the student had transitioned from online high school courses to in-person university courses, they also identified challenges with in-person class note taking, approaching professors, etc.

- Participant B: When asked what the most significant challenges first-year students face are, student identified organization and time-management as the most significant. Student identified non-academic challenges as less prominent than academic challenges but highlighted that it was difficult to make friends and meet new people in online courses. Class group work and in-person courses was helpful in this regard.
- Participant C: Moving away from family, adjusting to campus life, and building a new support system in university were some of the most prominent challenges identified by the student. Getting used to the expectations of university education (e.g., increased student responsibility, pace of coursework) was also identified as a major challenge.

4. *From the topic options provided in our survey, here is a breakdown of what students ranked as the most important topics to prepare students for first year of university. Do you agree with this ranking? Why or why not?*

From our survey:

- *Most important: Academic skills, Healthy Student Habits*
- *Moderate: Career skills, Writing skills*
- *Least important: Financial Literacy, Numeracy skills*

- Participant A: When ranking potential INSPIRE course topics based on importance, the student disagreed with some of the average rankings found from the survey and identified financial literacy as the most important, followed by writing skills.
- Participant B: When ranking potential INSPIRE course topics based on importance, student agreed with survey findings and ranked academic skills the highest. Reasoning being that building strong academic skills in first year builds good foundation for rest of undergraduate studies in all programs. High school students are rarely taught how to study effectively so an academic skills-focused course would help address this gap. Other course topics were lower priority for the student. They may still be important to other students but in a program/context-dependent manner.
- Participant C: When ranking potential INSPIRE course topics based on importance, student disagreed with some of the average rankings found from the survey and emphasized the importance of program/context. Student ranked healthy habits as the most important, reasoning being healthy habits form the foundation to be able to build other skills and are necessary for students to be able to sustain themselves throughout the school year. Academic skills were ranked second, followed by financial literacy, writing skills and career skills (in that order). Important to note that the relative importance these course topics is likely to

change as student's progress throughout their degrees (e.g., Career skills might not be as relevant to first-year students as they would be to upper year students)

Course Interest:

5. *What are the first things you consider when deciding on whether or not to take an elective university course?*

- Participant A: The student considers their interest in the course topic, course usefulness to their long term career goals, and research opportunities or other opportunities provided by the course.
- Participant B: The student considers their the course curriculum, methods of assessments, weighting of different assessments, and their interest in the course topic.
- Participant C: The student considers their interest in the course topic and course usefulness to development of appropriate skills to reach their long term career goals.

6. *As mentioned, we're exploring the development of new courses for first year students at McMaster called INSPIRE. INSPIRE courses will aim to ease the transition of incoming first year students through recognizing the gaps that may exist between the incoming students skills and the expectations of first year university at McMaster, and providing learning opportunities to close that gap. Possible topics include: Academic skills, Healthy Student Habits, Career skills, Writing skills, Financial Literacy, Numeracy skill. After hearing the description of INSPIRE courses, do any words or thoughts come to mind?*

- Participant A: Good preparatory resource for students going to university.
- Participant B: Building better habits or academic skills to prepare a student for coming into first year of university.
- Participant C: Flow and smoothen. The student envisions a course that smoothen the transition into university and increases the quality of first-year student life.

7. *Putting yourself in the shoes of an incoming first year student, what information, if anything, would you want to know about the courses to help you decide whether this is something you'd take? What factors might encourage or prevent you from taking an INSPIRE course?*

- Participant A: Prior to committing to an INSPIRE course, the student considers it important that the layout and details of the course are made available to students. Being unable to decipher what to expect from a course such as this would be a deterrent.
- Participant B: The student would be interested in taking an INSPIRE course if it employed a hands-on approach to learning and incorporated pieces like

reflections, skill-building activities, and other forms of class engagement. How assessments are conducted and weighted with respect to one another would also be an important factor to the student. Factors that would deter or hinder them from taking an INSPIRE course include lack of engaging activities.

- Participant C: The student would be interested in taking an INSPIRE course if it involved in-depth, practical discussions about the course topics. For example, for a healthy habits course, discussing the importance of sleep schedules in healthy living and strategies students can use to establish consistent sleep schedules would be interesting and relevant. They envision course scheduling being a barrier for some students with strict course plans (e.g., students interested in a ‘fast-tracked’ degree). Detailed course description would also be important to the student (e.g., rather than stating ‘healthy student habits’ only, mentioning specifically healthy eating habits, healthy sleeping habits, etc. will all be explored)

Course Structure:

8. *We’re trying to determine the best structure for INSPIRE courses. A full course at McMaster consists of three units. One structure for the courses is for each topic to be worth one unit, and students can choose to take however many units they like. An alternative structure is to package the courses together into one 3-unit course in which you can select specific topics you are interested.*

- Participant A: The student would consider the 3-unit structure to be more appropriate for first-years, reasoning being first-year students typically do not have much experience with choosing courses and may find it confusing having to decide how many one-unit courses they should take.
- Participant B: The one-unit course structure was preferred by the student, reasoning being it would provide the most flexibility.
- Participant C: The student would consider the 3-unit structure to be more appropriate, reasoning most first-year students may be unsure what skills would be the more important for their transition into university.

9. *Intersession learning traditionally offers courses to students outside the normal academic year, i.e. in the summer. Do you think incoming first year students would take these courses if all or part of them occurred in the summer before university? Why or why not?*

10. *Follow-up to question 9: An alternative is to offer the courses in the Fall (e.g., September to October). Do you think students would prefer this over a summer course? Why or why not?*

- Participant A: Some students might take the course if it was partly or completely offered in the Summer, but the student would personally prefer the Fall term as they are typically busy during the Summer.

- Participant B: Courses running completely or partially in Summer were also deemed more appropriate than a Fall term only course since the course aims to help students transition from high school to university, although some student's may prefer the Fall run time such as commuter students.
- Participant C: Offering the course in Summer before first-year was preferred, compared to Fall term. Student personally would have been interested in taking a course such as the INSPIRE course to ease their nervousness about university but recognized others might not be inclined to begin classes during their summer break.

Wrap up:

11. *Based on our conversation today, could you see yourself taking an INSPIRE course? Why or why not?*

- Participant A: Yes.
- Participant B: Yes. The student found the course topics interesting and helpful to learn more about skills needed in university.
- Participant C: Yes. The student found the course topics would have helped lower their anxiety before entering first year of university.

Key takeaways

The following are takeaways from this study, organized by objective:

Objective 1) Understand challenges faced by first year students at McMaster University

- Consistent with the assumptions underlining this study, students reported, on average, that they found their first year of studies to be moderately to very challenging.
- Students reported struggling most with time management, new educational formats, and teaching styles, and making friends.
- The interview findings were consistent with the survey findings in highlighting both academic and social challenges in acclimatizing to university.

Objective 2) Identify intersession learning course topics relevant and interesting to students

- Over 80% of respondents were interested in taking an INSPIRE course.
- When presented with a list of potential course topics, students reported “academic skills” and “healthy student habits” as the most important topics, followed by writing and career skills. Students did not seem as interested in financial and numerical literacy.
- Students identified time management, healthy study habits, and managing overall mental health as potential additional course topics.
- Interviewees differed in terms of the topics they found most relevant for INSPIRE courses.

Findings from the first two objectives foreground academic skills, time management, and managing personal health/well-being as the most relevant course topics to students in our sample.

Objective 3) Identify course structure appropriate/preferred by students

- Students were divided on the appropriate/preferred course structure. Approximately half the survey participants preferred to pick and choose between individual 1-unit course(s), while the other half preferred courses to be packaged together into one 3-unit course. Major factors influencing student decisions include flexibility and convenience, topic quantity and diversity, meeting the number of credits for graduating, and the potential level of difficulty of the course. Interviewed students also emphasized INSPIRE courses should involve a hands-on approach to learning and in-depth, practical discussions.
- Interviewees differed in terms of the preferred course structure, though they all agreed that having detailed course descriptions specifying the skills that would be developed and the pedagogical approach (e.g., hands-on/experiential learning) would be important for uptake.

Overall, the limited number of interviews we conducted mean these insights are preliminary and would benefit from further exploration, such as via a student working group or a renewed attempt at focus group research using a larger sample size.

Bibliography

1. Institutional Research and Analysis, "McMaster University Fact Book 2019-2020," (available at https://ira.mcmaster.ca/app/uploads/2020/10/Fact-Book-2020_1.pdf).

Appendices

Appendix A – Survey Questions

Description

Background: McMaster's Intersession Learning team is exploring the development of intersessional courses ("INSPIRE University Success") to help incoming students transition into their first year of university. This comes from recognizing that incoming students would benefit from addressing potential gaps in skills, knowledge, and expectations in their transition from high school to McMaster. "Intersessional" means the courses are taken in the Spring/Summer term when students have the flexibility to take courses outside of their program.

Objective: The Intersession Learning team has partnered with the McMaster Research Shop to collect feedback from students on the content and structure of INSPIRE University Success courses. The team will use your feedback to inform course development.

Confidentiality: All responses to this survey will be kept strictly confidential. Only authorized members of McMaster Research Shop will have access to the raw responses for research and reporting purposes and data will be stored securely on a Microsoft OneDrive folder. Your written responses may be used as quotations in our research report. In which case, your comments will be anonymized and all identifying information will be removed to the extent possible.

Time Required: 10-15 minutes

By participating in this study, you can also enter a draw for the chance to win a \$25 Amazon gift card. Please share your name and email in the last question of this survey if you would like to participate in this draw!

If you have any questions or concerns about the survey, please contact Hani Choksi at choksi@mcmaster.ca. If you have any questions about McMaster Intersession Learning, please contact Sehrish Zehra at zehras@mcmaster.ca. DEADLINE: November 27, 2022

Consent

By clicking "Next", you are providing your consent for the following:

- I understand that my participation in this survey is completely voluntary and that I am able to stop taking the survey at any time.
- I understand that my individual responses to this survey will be kept anonymous and will not be shared with anyone outside of the McMaster Research Shop.
- I understand that I have had the opportunity to ask any questions about my participation in this survey.

Section 1: Student Information

1. Are you a current undergraduate student at McMaster University? (Select one)

- Yes

- No
2. What is your current year of study? (Select one)
- 1st Year
 - 2nd Year
 - 3rd year or above

3. What program are you currently enrolled in?
- *Free-text response*

4. What faculty is your program in? (Select one)
- Faculty of Science
 - Faculty of Social Sciences
 - Faculty of Health Sciences
 - Faculty of Humanities
 - Faculty of Engineering
 - DeGroot School of Business

Section 2: Content Preferences

5. On a scale from 1 to 5, how challenging did you find your first year of University at McMaster?

- *Likert Scale. 1 = Not challenging at all, 5 = Very challenging*

6. Think back to your first month or two of University. What stands out, if anything, as the most challenging aspect of your experience? Feel free to elaborate on your response.

- *Free-text response*

7. McMaster Intersession Learning is exploring the development of intersessional courses that can help students transition better from high school to university. What topics do you believe are the most relevant to students entering their first year at McMaster University? Please rank the options based on importance (1 = most important, 6 = least important) and feel free to add your own options.

- Academic Skills (e.g., Group Work, Studying Strategies, Taking Research Notes, Goal Setting, etc.)
- Career Skills (e.g., Discovering Your Interests, Understanding Self, Career Ready Skills, etc.)
- Healthy Student Habits (e.g., Time Management, Stress Management, etc.)
- Numeracy Skills (e.g., Understanding Numeracy, Working with Percentages, etc.)
- Writing Skills (e.g., Academic Writing, Reading Journal Articles and Taking Notes, etc.)
- Financial Literacy (e.g., Financing Your Education, Managing Finances, etc.)

8. Feel free to elaborate on your response above (e.g., the order you chose/priorities)

- *Free-text response*

Section 3: Course Interest

In Fall 2021, McMaster Intersession Learning piloted a series of intersessional courses (“INSPIRE University Success”) to help incoming students transition into their first year of university. Topics included Academic Skills (INSPIRE 1AA1), Professional Skills (INSPIRE 1BB1), and Student Wellness (INSPIRE 1CC1).

9. If offered, would you be interested in taking an INSPIRE course? (Select one)

- Yes
- No

"If you answered ""Yes"" to Question 17:

10. Which INSPIRE courses would you be interested in? Please select all that apply.

- Academic Skills
- Career Skills
- Healthy Student Habits
- Numeracy Skills
- Writing Skills
- Financial Literacy

Section 4: Course structure

11. Each INSPIRE course is worth one unit. Would you prefer having the flexibility to pick and choose between individual 1-unit course(s)? Or would you prefer the courses packaged together into one 3-unit course that covers all relevant topics?

- Individual 1-unit courses
- Packaged 3-unit courses

12. Please feel free to elaborate on your answers to Question 11.

- *Free-text response*

Section 5: Focus Groups/Interview (optional)

13. Are you interested in participating in an interview or focus group to further elaborate on your responses to this survey? If yes, please provide your name and email

- Yes
- No

14. Name and Email Address

- *Free-text response*

Section 6: Amazon gift card raffle/Last question!

We will be awarding \$25 Amazon gift cards to two randomly chosen participants in this study (one for a survey participant, one for a focus group/interview participant)

15. Do you want to be entered into a draw for a \$25 Amazon gift card?

- Yes
- No

16. If yes, please share your name and email address (to be contacted for the prize)

- *Free-text response*

Appendix B – Survey recruitment poster and message (for social media & email communications)

How was your first year at McMaster?

Tell us your thoughts!

And enter for a chance to win a \$25 Amazon gift card!

McMaster's Intersession Learning team is developing courses to help students transition to university. We'd like your feedback on what those courses would look like.

Please use the linked survey to share your feedback!

McMaster University RESEARCH SHOP

McMaster University Research Shop is working with the McMaster Intersession Learning team to guide the development of intersessional courses (“INSPIRE University Success”). The goal of these courses is to help incoming students transition into their first year of university, which comes from recognizing that there is a large gap in skills, knowledge, and expectations that incoming high school students face when starting at McMaster.

We are hoping to collect feedback directly from first and second-year students regarding areas they found the most challenging during their transition into university (e.g., academics, financial literacy, etc.), and better understand course topics that would be helpful to students entering their first year at McMaster University.

Please use the link [in our bio / attached to this post] to complete the survey.

If you have any questions or concerns about the collection or analysis of data for this project, please contact Hani Choksi (choksih@mcmaster.ca). If you have any questions about McMaster Intersession Learning, please contact Sehrish Zehra (zehras@mcmaster.ca).

Appendix C – Codebooks for analyzing the survey’s open-ended questions

Question 6 Codebook

Q6: Think back to your first month or two of University. What stands out, if anything, as the most challenging aspect of your experience? Feel free to elaborate on your response.

- *Free-text response*

Theme	Health Sciences	Business	Engineering	Humanities	Social Sciences	Science	Total
Acclimatization	9	7	9	2	1	10	38
Time management	9	12	11	9	8	45	94
Change in format and teaching style	11	9	8	10	13	17	68
Studying + Note-taking strategies	3	2	9	1	3	32	50
Making friends	8	1	5	8	15	20	57
Being away from home/family	1	2	1	2	5	14	25
Group Work	0	1	2	0			3
Limited food options	0	1	1	1		1	4
Getting to know your professors	2	2	2	2	1	3	12
Difficult courses	3	2	2	6	2	21	36
Healthy sleep schedule	0	0	1	0	2	1	4
Balancing	3	0	5	3		23	0
Mental health	3	0	2	4	1	11	34
Academic Writing	1	0	0	1	1	1	21
Finding/learning about campus resources	1	0	1	2	2	3	4
Paying tuition	0	0	0	0	1	1	9
Planning your program/courses	0	0	0	0	2	1	2

Question 8 Codebook

Q7: McMaster Intersession Learning is exploring the development of intersessional courses that can help students transition better from high school to university. What topics do you believe are the most relevant to students entering their first year at McMaster

University? Please rank the options based on importance (1 = most important, 6 = least important) and feel free to add your own options.

- Academic Skills (e.g., Group Work, Studying Strategies, Taking Research Notes, Goal Setting, etc.)
- Career Skills (e.g., Discovering Your Interests, Understanding Self, Career Ready Skills, etc.)
- Healthy Student Habits (e.g., Time Management, Stress Management, etc.)
- Numeracy Skills (e.g., Understanding Numeracy, Working with Percentages, etc.)
- Writing Skills (e.g., Academic Writing, Reading Journal Articles and Taking Notes, etc.)
- Financial Literacy (e.g., Financing Your Education, Managing Finances, etc.)

Q8: Feel free to elaborate on your response above (e.g., the order you chose/priorities)

- *Free-text response*

Theme	Health Sciences	Business	Engineering	Humanities	Social Sciences	Science	Total
Time Management	4	2	1	0	3	19	29
Reading and writing proficiency	1	1	0		2	5	11
				2			
Essay writing and citations	0	0	1	1	1	1	4
Group work	0	1	0	0	1	0	2
Numeracy and financial skills are not crucial	0	1	0	0	0	0	1
Managing finances	1	0	1	1	5	7	15
Physical Health management	0	2	2	1	0	5	10
Healthy lifestyle	2	0	1	3	2	7	15
Good grades	3	0	0	0	3	5	11
Combat burn-out	1	0	1	0	0	2	4
Mental health management	2	0	2	1	2	10	17
Stress management	0	0	2	1	2	11	16
All skills are new and important	1	2	1	2	3	4	13
Building a resume	0	0	1	0	0	0	1
Co-op/internship assistance	0	0	2	0	0	0	2
Improve learning	2	0	0	0	2	7	11

Healthy study habits	0	0	0	4	4	14	22
Vocational skills	0	0	0	1	0	1	2
Note taking skills	0	0	0	0	0	8	8

Question 12 Codebook

Q11: Each INSPIRE course is worth one unit. Would you prefer having the flexibility to pick and choose between individual 1-unit course(s)? Or would you prefer the courses packaged together into one 3-unit course that covers all relevant topics?

- Individual 1-unit courses
- Packaged 3-unit courses

Q12: Please feel free to elaborate on your answers to Question 11.

- *Free-text response*

Theme	Health Sciences	Business	Engineering	Humanities	Social Science	Science	Total
Interested in specific topics	3	1	3	7	1	24	39
Want to learn many topics	4	0	1	3	5	14	27
Level of difficulty	3	1	6	2	2	7	21
Time	2	2	0	2	3	13	22
Stressful / motivation		1	0	0	2	6	9
Flexibility / convenience/ efficient	2	1	3	2	5	16	29
Comprehensive and Systematic	1	1	4	0	0	2	8
Learning takes time/solid understanding, in-depth learning	2	1	6	2	0	11	22
Prepared/decide to take course / commitment	1	0	3	0	1	3	8
Choose a few topics	1	0	1	0	1		3
More Credits for Graduating	2	0	1	5	6	12	26
Can connect or relate topics better	6	0	0	1	0	2	9
Organized	0	0	0	0	2	4	6

Appendix D – Focus group/interview recruitment email

Dear Participants,

I am reaching out on behalf of McMaster University Research Shop. We are working with the Department of Intersession Learning to explore the development of intersessional courses (“INSPIRE University Success”) to help incoming students transition into their first year of university.

Thank you for agreeing to participate in a follow-up interview or focus group to further elaborate on your survey responses. The meeting will be conducted online via Zoom and be approximately 1 hour long. Your responses will be kept confidential and used solely for the purpose of informing the Department’s program development.

We are currently scheduling interviews or focus groups. Please let us know which of the following times work for you by Tuesday, January 10

Available Time Slots: <dates and times>

Sign up for a time slot through this link: <link to Doodle poll>

A member of our research team will send you a calendar invitation to confirm your time slot.

If you have any questions or concerns about the focus group, please contact Hani Choksi at choksih@mcmaster.ca. If you have any questions about McMaster Intersession Learning, please contact Sehrish Zehra at zehras@mcmaster.ca.

Sincerely,

The Research Shop (Intersessional Learning Project Team)

Appendix E – Focus group/interview guide

Hi everyone.

Thank you for agreeing to participate in this focus group. [Introduce facilitator/ notetaker]. We're researchers with the McMaster Research Shop and we're partnering with Intersession Learning to explore the development of courses that will help students with their transition to first year at McMaster. Getting feedback from students is important to us, and so we're going to be asking you some questions about what these courses might look like. The Intersession Learning team will use your feedback to inform future course development.

We are going to ask [12] questions. Does anyone have questions about what we're about to do?

Before we begin our talk, we want to go over some basic ground rules:

Everyone's views are welcomed and important.

- It is important to remember to let everyone have the chance to speak and not to interrupt anyone when they are talking. It is also important to know that there are no right or wrong answers and that everyone's opinion is valuable.
- We may step in to make sure everyone has a chance to speak, and we may also step in if we feel the talk is going off-topic.

Everything that's said in this group should stay in the group.

- This means that you should not tell anyone about another member's answer
- ### **Your participation in this group is voluntary.**
- You do not have to answer any question that you do not feel comfortable answering.
 - If you don't want to participate, feel free to sit silently and listen.

This group discussion will not be longer than 1 hour.

Use of Zoom recording – if you are ok with it, this focus group will be audio-recorded to make it easier to understand your answers.

- The recordings and written scripts will be securely stored in a Google Drive folder that only the McMaster Research Shop have access to.
- We will also be taking notes during the discussion.
- If you don't want to be audio-recorded, feel free to sit silently and not participate.

We might ask you to clarify things that we do not fully understand. If at any point you feel like you need a break, please let us know and we can take a short break. We will also ask if you need a break halfway through the discussion.

Does anyone have any questions before we begin?

We are going to start the discussion now. If you do not want to answer a question, it's

okay. We just ask that you sit here but you do not have to answer any of the questions. If you no longer wish to participate in the focus group, you are also welcomed to leave at any point. We just ask you notify us before taking your leave.

Ice Breaker Question:

Which image best represents how you are currently feeling?

[share image of emotional scale depicted via various character expressions]

Content Preferences:

12. From your perspective, what are some words you'd use to describe peoples' experience of first year University
 - a. Let everybody share some words and ask them to elaborate on the prominent ones (e.g., if "hard" was mentioned three times, ask to elaborate why they used that word to describe first year)
13. How prepared did you feel going into university?
14. What do you think are the biggest challenges for students in first year University, if anything?
 - a. Prompt: What did you or others struggle with the most?

Prompt: These can be academic or non-academic challenges (e.g., related to life on and off campus)

15. From the topic options provided in our survey, here is a breakdown of what students ranked as the most important topics to prepare students for first year of university. Do you agree with this ranking? Why or why not?

From our survey:

Most important: Academic skills, Healthy Student Habits

Moderate: Career skills, Writing skills

Least important: Financial Literacy, Numeracy skills

- a. See if a general consensus emerges around the most important topics
- b. Ask: are there specific topics within the top categories that would be important in a course?

Course Interest:

16. What are the first things you consider when deciding on whether or not to take an elective university course? (If needed, provide description of electives)

As mentioned, we're exploring the development of new courses for first year students at McMaster called INSPIRE. INSPIRE courses will aim to ease the transition of incoming first year students through recognizing the gaps that may exist between the incoming students skills and the expectations of first year university at McMaster, and providing learning opportunities to close that gap. Possible topics include: Academic skills, Healthy Student Habits, Career skills, Writing skills, Financial Literacy, Numeracy skills

17. After hearing the description of INSPIRE courses, do any words or thoughts come to mind?
18. Putting yourself in the shoes of an incoming first year student, what information, if anything, would you want to know about the courses to help you decide whether this is something you'd take? What factors might encourage or prevent you from taking an INSPIRE course?

Course Structure:

19. We're trying to determine the best structure for INSPIRE courses. A full course at McMaster consists of three units. One structure for the courses is for each topic to be worth one unit, and students can choose to take however many units they like. An alternative structure is to package the courses together into one 3-unit course in which you can select specific topics you are interested.

- a. Putting yourself in the shoes of your average first year student, what option do you think would work best, and why?

20. Intersession learning traditionally offers courses to students outside the normal academic year, i.e. in the summer. Do you think incoming first year students would take these courses if all or part of them occurred in the summer before university? Why or why not?

21. An alternative is to offer the courses in the Fall (e.g., September to October). Do you think students would prefer this over a summer course? Why or why not?

Wrap up:

22. Based on our conversation today, could you see yourself taking an INSPIRE course? Why or why not?

- a. Prompt: What about other first year students? Why or why not?

23. Do you have anything else you'd like to add to the discussion?

Appendix F – Number of responses to survey questions

Total number of responses (after data clean up): 694

Question No.	Number of Responses
1	694
2	694
3	589
4	694
5	692
6	519
7	684-687
8	190
9	686
10	577
11	681
12	224
13	677
14	253
15	685
16	656

Appendix G – Students’ program of study.

Program name	Percentage
Life Science	20.9%
Other	15.1%
Computer Science	4.2%
Kinesiology	4.2%
Math And Statistics	3.0%
Social Science	2.9%
Health Sciences	2.6%
Business	2.4%
Humanities	2.4%
Economics	2.3%
Engineering	2.3%
Biochemistry	2.2%
Commerce	1.9%
Political Science	1.9%
Medical Radiation Sciences	1.7%
Biology	1.6%
Social Psychology	1.6%
Human Behaviour	1.3%
Civil Engineering	1.0%
Earth And Environmental Science	1.0%
History	1.0%
Software Engineering	1.0%
Arts and Sciences	0.9%
Physics	0.9%
Chemical And Physical Science	0.7%
Chemical Biology	0.7%
Marketing	0.7%
Psychology	0.7%
Integrated Science	0.6%
Mathematics	0.6%
Nursing	0.6%
Theatre And Film	0.6%
Accounting	0.4%
Chemical Engineering	0.4%
Chemistry	0.4%
Cognitive Science Of Language	0.4%
Communication Studies	0.4%
Computer Engineering	0.4%
Electric Engineering	0.4%
Electrical And Biomedical Engineering	0.4%
Engineering Physics And iBioMed	0.4%
English And Cultural Studies	0.4%

Environmental Sciences	0.4%
Linguistics	0.4%
Materials Engineering	0.4%
Philosophy	0.4%
Psychology, Neuroscience & Behaviour	0.4%
Accounting And Financial Management Services	0.3%
Applied Psychology In Human Behaviour	0.3%
Biochemistry And Biomedical Sciences	0.3%
Biotechnology	0.3%
Chemical And Biomedical Engineering	0.3%
Engineering Physics	0.3%
Engineering Science	0.3%
French	0.3%
iBioMed	0.3%
Manufacturing Engineering Technology	0.3%
Media Arts	0.3%
Neuroscience	0.3%
Principles Of Marketing	0.3%
Sociology	0.3%
Anthropology	0.1%
Archaeology	0.1%
Art History	0.1%
Art History And Communication Studies	0.1%
Biodiversity And Environmental Science	0.1%
Biology And Pharmacology	0.1%
Biology And Psychology	0.1%
Biology and Psychology, Neuroscience And Behaviour	0.1%
Biomedical Science	0.1%
Classics	0.1%
Communication And Global Peace And Social Justice	0.1%
Communications And Philosophy	0.1%
Electrical And Computer Engineering	0.1%
Electrical Engineering And iBioMed	0.1%
Electrical Engineering And Management	0.1%
Environment and Society	0.1%
Environmental Engineering	0.1%
Geography	0.1%
Health And Society & Political Science Double Major	0.1%
History And Classics	0.1%
Human Resources Management	0.1%
Literature	0.1%
Mathematics and Computer Science	0.1%
Mechanical And Electrical Engineering	0.1%

Medical And Biological Physics	0.1%
Music	0.1%
Philosophy And Theatre And Film	0.1%
Social Work	0.1%